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## ACCOMMODATING ZONULAR MINI-BRIDGE IMPLANTS

### ABSTRACT OF THE DISCLOSURE

10 Surgical correction of presbyopia and hyperopia by a circularly distributed  
assembly of mini-bridges implanted between the interior surfaces of the ciliary  
muscle and the exterior surface of the lens capsule, for augmenting the  
transmission of the contraction force of the ciliary muscle/zonule assembly to the  
lens capsule. The lens is symmetrically squeezed by mini-bridges acting in  
15 concert with the ciliary muscle thus changing the curvature of the lens. The mini-  
bridges are composite synthetic muscles comprising either passive biocompatible  
mini-bridges made with polymeric gels, silicone polymers or a composite,  
electromagnetically or mechanically deployable mini-bridges, inflatable balloons  
or synthetic muscles. The surgical procedure comprises using a ciliary muscle  
20 relaxant to stretch the lens/zonules/ciliary muscle assembly. An ultrasonic  
biomicroscope (UBM) is then used to enable the surgeon to see the area for  
implantation and the mini-bridges and thus perform endoscopic or incisional  
surgery to implant the mini-bridges in and around zonular cavities.

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